



STATE OF WASHINGTON

## STATE BUILDING CODE COUNCIL

### Washington State Energy Code Development Standard Energy Code Proposal Form

Jan 2022

Log No. 21-GP3-015

Code being amended: ☐ Commercial Provisions ☒ Residential Provisions

Code Section # R403.5.5

Brief Description:

Adds additional exceptions to water heater location restrictions.

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

**R403.5.5 Water heater installation location.** Service hot water systems shall be installed within the building thermal envelope.

**EXCEPTIONS:**

1. Where the hot water system efficiency is greater than or equal to 2.0 UEF.

2. Tankless water heaters.

3. Gas heat pump water heaters intended for exterior installation.

Purpose of code change:

Since the WSEC-R is being revised to address EPCA issues, the 2021 WSEC-R will most likely be expanded to allow electric resistance and gas appliances in more applications. Related sections need to be updated to reflect this. Also, as written the WSEC-R runs afoul with EPCA by not allowing certain gas heat pump water heaters.

Proposed code change text permits water heaters to be installed per manufacturer's installation instructions. The intent of this section is to capture energy savings from standby losses. Tankless water heaters have minimal standby losses – they can be appropriately installed in garages (or even outdoors in mild climates) without significant energy penalty. Likewise, certain gas heat pump water heaters expected to be on the market within a year, are designed for outdoor installation by the manufacturer, have minimal standby losses, and would be precluded from use by the WSEC-R as written – which would run afoul with EPCA.

Your amendment must meet one of the following criteria. Select at least one:

- |   |  |
|---|--|
| <input type="checkbox"/> Addresses a critical life/safety need.   | <input checked="" type="checkbox"/> Consistency with state or federal regulations. |
| <input type="checkbox"/> The amendment clarifies the intent or application of the code.                                     | <input type="checkbox"/> Addresses a unique character of the state.                |
| <input type="checkbox"/> Addresses a specific state policy or statute.<br>(Note that energy conservation is a state policy) | <input type="checkbox"/> Corrects errors and omissions.                            |

Check the building types that would be impacted by your code change:

- ☒ Single family/duplex/townhome ☒ Multi-family 1 – 3 stories ☐ Multi-family 4 + stories

June 9, 2023

☐ Commercial / Retail

☐ Institutional

☐ Industrial

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## **Economic Impact Data Sheet**

**Is there an economic impact:** ☒ Yes ☐ No

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants, and businesses. If you answered "No" above, explain your reasoning.

This proposal will result in lower construction costs by allowing more flexibility for the installation of certain water heaters.

Provide your best estimate of the **construction cost** (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). **Webinars on the tool can be found [Here](#) and [Here](#)**)

\$[Click here to enter text.](#)/square foot (For residential projects, also provide \$[Click here to enter text.](#)/ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

Costs will vary widely depending on the application. There is insufficient time to generate these calculations.

Provide your best estimate of the **annual energy savings** (or additional energy use) for your code change proposal?

[Click here to enter text.](#)KWH/ square foot (or) [Click here to enter text.](#)KBTU/ square foot

(For residential projects, also provide [Click here to enter text.](#)KWH/KBTU / dwelling unit)

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

Energy savings should be nearly equivalent.

List any **code enforcement** time for additional plan review or inspections that your proposal will require, in hours per permit application:

**Small Business Impact.** Describe economic impacts to small businesses:

This should reduce economic impact to small businesses.

**Housing Affordability.** Describe economic impacts on housing affordability:

This should reduce economic impact on housing affordability.

**Other.** Describe other qualitative cost and benefits to owners, to occupants, to the public, to the environment, and to other stakeholders that have not yet been discussed: